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08/879,467 06/20/97 DURBIN

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EXAMINER

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| ART UNIT | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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| Office Action Summary | Application No. 08/879,467 | Applicant(s) Durbin et al. |
| | Examiner Wenpeng Chen | Group Art Unit 2724 |

Responsive to communication(s) filed on Apr 12, 1999.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1-18 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1-18 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

Art Unit:

Examiner's responses to Applicant's remark

1. Applicants' arguments filed on 4/12/1999 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitation.

a. Applicants' argument -- (a) With regard to Claims 1 and 17, Feng does not support the limitation A: "second processing circuit, coupled to the image buffer, that, after the plurality of images are stored in the image buffer, attempts decoding processing of the plurality of images." (b) Further with regard to Claim 1, Feng only operates on a single frame at a time.

Examiner's response --

In response to point (a), Feng indeed teaches the limitation. The Examiner interpreted in the First Action the following:

-- frame buffer memory 274 to be the image buffer recited in Claim 1,
-- the combination of (1) control and section circuit 284, (2) compensation circuit 286, (3) compensated frame buffer memory 288, and (4) image processing circuit 290 to be the second processing circuit recited in Claim 1.

The passage in column 12, lines 1-4 clearly teaches that a plurality of images are stored in the frame buffer memory 274. The passage in column 12, lines 10-16, stating that "to couple a

Art Unit:

captured frame from memory 274," teaches that decoding processing for each image stored in memory 274 is attempted after the plurality of images are stored in memory 274.

In response to point (b), Claim 1 does not prevent one from operating on a single frame at a time. Furthermore, each Feng's frame consists of three images: red, green, and blue images.

b. Applicants' argument -- For Claim 2, Feng does not teach the limitation "construct a composite image from the plurality of images for decoding processing."

Examiner's response -- Feng indeed teaches the limitation. As cited above, Feng teaches coupling a captured frame from memory 274 which stores the plurality of images having red, green, and blue images in each frame. In the passage column 12, lines 10-54, Feng teaches that the captured frame is compensated to by composition to form a composite image based on the red, green, and blue images for decoding process.

Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. So the Examiner considers the above interpretation to meet the Applicants' limitation within the broad meaning of the term. The Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977. If the Applicants would require to make a composite image by combining data from two frames, each captured at a different time, please recite explicitly in the claim.

Art Unit:

c. Applicants' argument -- With regard to Claims 4, 6, and 12, Feng does not perform or suggest "proximity screening of the image data from the optical system."

Examiner's response -- Feng teaches to screen a captured image by examining whether the image is within predetermined acceptable ranges for brightness in column 15, line 63 to column 16, line 5. This is a proximity screen of image brightness, namely how close brightness is.

Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. So the Examiner considers the proximity screen of image brightness to be Applicants' proximity screening of the image data which is captured from the optical system within the broad meaning of the term. The Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977.

d. Applicants' argument -- Feng's frame buffer memory does not store a plurality of coded images generated by the image processing unit.

Examiner's response -- The passage in column 12, lines 1-4 in Feng clearly teaches that a plurality of images are stored in the frame buffer memory 274. The images are coded by a first processing circuit which comprises the elements 256, 258, 260, 264, and 316 of Fig. 13.

e. Applicants' argument -- With regard to Claims 3 and 13, it is improper to equal "a predetermined number of failed decoding attempts to end an attempt to decode an image" to

Art Unit:

"storing of a plurality of images, where the plurality of images constitutes a predetermined number of images."

Examiner's response -- The rejection is based on the following observations:

- The word "comprising" recited in the claims does not require that a predetermined number of images have to be stored for every decoding process.
- When an attempt to decode an image is ended, because a predetermined number N of failed decoding attempts has been reached, N images have been captured and stored before the end of the attempt.

Therefore, it is proper for the Examiner's interpretation.

f. Applicants' argument -- With regard to Claim 18, the prior art does not teach nor suggest that a plurality of images are used in the determination of a single decoded image.

Examiner's response -- In response to applicants' argument that the references fail to show certain features of applicants' invention, it is noted that the features upon which applicant relies (i.e., a plurality of images are used in the determination of a single decoded image) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit:

g. Applicants' argument -- Park does not teach the reference images recited in Claim 10.

Examiner's response -- As cited by the Examiner in First Office Action, Park teaches the MPEG compression method. (Abstract) The MPEG method is an industrial standard for compressing a sequence of images. In the method, the first image is used as a reference and the differences between the reference and its subsequent images are derived. Both the reference and the differences are coded. As Park recites MPEG method, it inherently cites the details of the method and apparatus of using reference images as recited in Claim 10.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-2, 4-6, 8-9, 12, 14, and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Feng et al. (US patent 5,783,811).

Art Unit:

Feng teaches a coded image capture and decoding system (column 7, lines 1-33)

comprising:

- an optical system that captures image data from coded targets; (column 10, lines 40-52)
- a first processing circuit, coupled to the optical system, that generates a plurality of images based on image data received from the optical system; (column 10, line 53 to column 11, line 39; comprising elements 256, 258, 260, 264, 316 of Fig. 13)
 - wherein the first circuit performs proximity screening which detects the coded target and initiates capture cycling; (column 15, line 63 to column 16, line 5)
 - wherein the first circuit converts the image data into a plurality of transition points; (column 12, 55-67; The black or white value is a transition point.)
- an image buffer, coupled to the first processing circuit, that stores the plurality of images generated by the first processing circuit; (column 11, line 21 to column 12, line 9; comprising element 274 of Fig. 13)
- a second processing circuit, coupled to the image buffer, that attempts decoding processing of the plurality of images after the plurality of images is stored in the image buffer; (column 12, lines 1-9 and 55-67; comprising elements 284, 286, 288, 290 of Fig. 13)
 - wherein the second circuit constructs a composite image from the plurality of images for decoding processing; (column 12, lines 10-54; The original images are compensated to by composition to form a composite image for decoding process.)

Art Unit:

-- a host processing circuit that performs decoding processing of coded images; (column 17, lines 18-30)

- wherein the host processing circuit is selectively directed by the second (host) processing circuit, controlling the time at which decoding processing to be performed; (through the element 284 of Fig. 13)

-- interface circuitry that assists in delivering the plurality of coded images to the host processing circuit for decoding after the plurality of coded images have been stored in the image buffer. (the lines connecting the host processing circuit to the buffer in Fig. 13)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit:

5. Claims 3, 13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng as applied to claims 1, 8, and 17 above, and further in view of the admitted prior art (pages 3-6 of the present specification.)

Feng teaches a coded image capture and decoding system as explained above. Feng further teaches:

-- capturing multiple images with an operator depressing a trigger and repeating capturing an image and decoding if a decoding of a dataform fails; (column 15, lines 15-39; column 16, lines 28-62)

-- a wireless radio to transfer captured images to a remote device. (Column 18, lines 29-43; column 20, lines 1-21)

However, Feng does not teach that (1) the number of the multiple images is predetermined and (2) the remote device can be explicitly a host processor.

The admitted prior art teaches

-- a process in that a decoding sequence continues until either a coded image is successfully decoded, or a predefined number of failed decoding attempts occur; (page 3)

-- multiple images are wirelessly transferred to a remote site for further processing. (page 4).

It is desired that a failed decoding process has to be ended after a predefined number of failed decoding attempts as taught by the admitted prior art to balance the trial time and probability of successful decoding. It would have been obvious to one of ordinary skill in the art,

Art Unit:

at the time of the invention, to apply the teaching of the admitted prior art to the Feng's system to capture a predetermined number of images for decoding, because the combination balance the trial time and probability of successful decoding.

It is further desired to have the capability of remote decoding and monitoring. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teaching of the admitted prior art to the Feng's system to send multiple images to a remote site wirelessly for decoding or monitoring, because the combination adds the additional capability as stated above.

6. Claims 7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng as applied to claims 1 and 8 above, and further in view of Park (US patent 5,675,424).

Feng teaches a coded image capture and decoding system as explained above. Feng further teaches:

-- compressing the images before sending to a receiver. (Element 294 of Fig. 13A; column 13, lines 18-56)

However, Feng does not explicitly cite the reference image and difference recites in Claim 10.

Park teaches the MPEG compression method. (Abstract) The MPEG method is the most useful method for compressing a sequence of images. In the method, the first image is used as a

Art Unit:

reference and the differences between the reference and its subsequent images are derived. Both the reference and the differences are coded.

It is desired to transfer data in an efficient compressed form to gain transmission speed. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply MPEG compression method to the Feng's system to compress image data, because the combination provides an efficient coding process.

Park further teaches a parallel decoding method. (Fig. 4; column 3, lines 14-39)

It is also desired to be able to use a low-speed decoder as well as high speed decoder to decode a dataform and images. As taught by Park, decoding in parallel with a set of decoders can speed up its overall decoding speed. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use parallel decoding in the Feng's system to decode dataform, because the combination expands the capability of the system by increasing process speed or allowing the use of low-speed processors.

Conclusion

7. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO

Art Unit:

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is (703) 306-2796.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

The art unit fax number is (703) 306-5406.

Wenpeng Chen



June 11, 1999

